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EXAMINER	
ROBERTS, JESSICA M	

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/670,245	**Applicant(s)** SUGANO ET AL.	
	Examiner JESSICA ROBERTS	**Art Unit** 2621	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 09 April 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires *4* months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: _____.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☒ Other: see continuation sheet.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621

As to Applicants argument that none of the rejections in the present office action address or point out where the references teach or suggest performing the claimed operations on "respective segmented shots".

The Examiner respectfully disagrees. Chakraborty discloses a scene classification apparatus (fig. 1) of video for classifying a sequence of shots into a dynamic scene with much motion or a static scene with little motion, where the dynamic scene and the static scene respectively include a plurality of continuous shots and are thus a larger unit than a shot, comprising: a calculator for calculating shot density (histogram difference metric, a histogram is a graphical display of tabulated frequencies and fig. 2A: 203) DS of the from the respective shots; a calculator for calculating motion intensity (histogram difference metric, a histogram is a graphical display of tabulated frequencies and fig. 2A:203. Further regarding claim 2A, the element 212 output the potential shot/scene change location based on histogram difference, therefore, it is clear to the Examiner that Chakraborty teaches to disclose the density, which reads upon the claimed limitation); a calculator for calculating motion intensity of the respective shot (fig. 2A, element 211, outputs potential shot/scene change locations based on interframe difference. Since fig. 2A, element 211, outputs potential shot/scene change locations based on interframe difference, it is clear to the Examiner that Chakraborty discloses to calculate the motion of the shot, which reads upon the claimed limitation) of the respective shots; and a dynamic/static scene classifier (metric computation col. 5 line 9-11, fig. 1:14-17 and fig. 2A) for classifying the sequence (continuous units or “shots” col. 1 line 35-37) of shots into the dynamic scene (abrupt scene, see abstract, furthermore, the meaning of abrupt is interpreted as sudden or fast) with much motion or the static scene with little motion (gradual scene, see abstract, furthermore, the meaning of gradual is interpreted as slow and not moving quickly) based on the shot density (histogram difference, a histogram is a graphical display of tabulated frequencies) and the motion intensity of the respective shots (Chakraborty discloses where the output of each of the scene change detection processes are potential shots/scene change location based on the respective metrics (steps 211,212, and 213), both abrupt and gradual. The next steps in the preferred scene change detection process involve identifying and validating the scene changes based on various conditions. For instance, referring to FIG.2b, in the preferred embodiment, abrupt scene changes are identified where candidate scene change location output from the shot detection processes of the interframe and histogram difference metrics are in agreement (step 214). In particular, abrupt scene changes are identified by verifying that the conditions regarding both the interframe difference metric and the difference are satisfied. It is to be appreciated that by integrally utilizing the scene change candidates output from such shot detection processes, false alarms in identifying scene changes that may occur due to small motion where the interframe difference is high (and thus exceed the threshold in equation 11 above) will not occur since the condition for the histogram difference for the candidate must also be satisfied. (In which case, for small motion, such condition typically will not be satisfied), Column 12 line 60 to column 13 line 14 and fig. 2A-2B. Further regarding fig. 2A, element 211, outputs potential shot/scene change locations based on interframe difference, it is clear to the Examiner that Chakraborty discloses to determine if the scene is gradual or static, which reads upon the claimed limitation.).

Chakraborty does not explicitly teach segmented shots; shot segmentation device to segment the video into respective shots. However, Toklu teaches a shot segmentation device to segmentation device to segment the video into respective shots (video segmentation module 12, column 5 line 38-57, and fig 1 element 12).

1. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Toklu with Chakraborty to generate a content based visual summary of video and facilitate digital video browsing and indexing, column 3 line 40-43).In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As to Applicants argument that Chakraborty does not teach performing the claimed operations on "respective segmented shots" because no shot has been determined at the time the operations relied upon are performed.

The Examiner respectfully disagrees, and directs the Applicant to previous response.

As to Applicants argument that throughout the rejection the Examiner makes no distinction between a shot and a scene.

The Examiner respectfully disagrees. Chakraborty teaches histogram difference metric, a histogram is a graphical display of tabulated frequencies and fig. 2A: 203) DS of the from the respective shots; a calculator for calculating motion intensity (histogram difference metric, a histogram is a graphical display of tabulated frequencies and fig. 2A:203. Further regarding claim 2A, the element 212 output the potential shot/scene change location based on histogram difference, therefore, it is clear to the Examiner that Chakraborty teaches to disclose the density, which reads upon the claimed limitation)

As to Applicants argument that none of the submitted references disclose or suggest any of the features recited in claim 1, 4, 9, 13 and 14, other than the claimed “a shot segmentation device to segment the video into respective shots," because none of the references teach or suggest performing the claimed operations on the segmented shots or classifying a scene including a plurality of continuous shots.

1. The Examiner respectfully disagrees. Regarding claim 1, Chakraborty teaches a calculator for calculating shot density DS of the video from respective shots (histogram difference metric, a histogram is a graphical display of tabulated frequencies and fig. 2A:203. Further regarding claim 2A, the element 212 output the potential shot/scene change location based on histogram difference, therefore, it is clear to the Examiner that Chakraborty teaches to disclose the density, which reads upon the claimed limitation); a calculator for calculating motion intensity of the respective shot (regarding fig. 2A, element 211, outputs potential shot/scene change locations based on interframe difference. Since fig. 2A, element 211, outputs potential shot/scene change locations based on interframe difference, it is clear to the Examiner that Chakraborty discloses to calculate the motion of the shot, which reads upon the claimed limitation); and a dynamic/static scene classifier for classifying shots into the dynamic scene with much motion or the static scene with little motion based on the shot density and the motion intensity. Since Chakraborty discloses where the output of each of the scene change detection processes are potential shots/scene change location based on the respective metrics (steps 211,212, and 213), both abrupt and gradual. The next steps in the preferred scene change detection process involve identifying and validating the scene changes based on various conditions. For instance, referring to FIG.2b, in the preferred embodiment, abrupt scene changes are identified where candidate scene change location output from the shot detection processes of the interframe and histogram difference metrics are in agreement (step 214). In particular, abrupt scene changes are identified by verifying that the conditions regarding both the interframe difference metric and the difference are satisfied. It is to be appreciated that by integrally utilizing the scene change candidates output from such shot detection processes, false

alarms in identifying scene changes that may occur due to small motion where the interframe difference is high (and thus exceed the threshold in equation 11 above) will not occur since the condition for the histogram difference for the candidate must also be satisfied. (In which case, for small motion, such condition typically will not be satisfied), Column 12 line 60 to column 13 line 14 and fig. 2A-2B. Further regarding fig. 2A, element 211, outputs potential shot/scene change locations based on interframe difference, it is clear to the Examiner that Chakraborty discloses to determine if the scene is gradual or static, which reads upon the claimed limitation). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

2.

As to Applicants argument that Yilmaz does not alleviate any of the deficiencies of Chakraborty et al., and Toklu.

The Examiner respectfully disagrees. Yilmaz was relied upon for teaching Yilmaz teaches to cluster news video into news and advertisements based, based on the shots boundaries detected by principle coordinate approach, we used the minimum eigenvalued eigenvector, v3. To define a shot if it is anchor news or advertisement, we calculated the mean v3's in a shot and if its below a threshold, it is labeled as anchor news; otherwise it is labeled as advertisement, 4.4 Clustering Video Stream into News and Commercials. Further disclosed by Yilmaz is that shot boundaries are defined by thresholding the rotation changes for the whole video stream, 3.2 Algorithm. Therefore it is clear to the Examiner that Yilmaz teaches to determine a commercial based on the shot boundary thresholds.

As to Applicants argument that the Examiner relies on Yilmaz to teach the claimed "classifying the scene as a commercial scene in response to the comparing indicating that the number of shot boundaries detected during the predetermined interval is greater than the predetermined reference number". However, Yilmaz does not disclose this feature.

The Examiner respectfully disagrees. Yilmaz teaches to cluster news video into news and advertisements based, based on the shots boundaries detected by principle coordinate approach, we used the minimum eigenvalued eigenvector, v3. To define a shot if it is anchor news or advertisement, we calculated the mean v3's in a shot and if its below a threshold, it is labeled as anchor news; otherwise it is labeled as advertisement, 4.4 Clustering Video Stream into News and Commercials. Further disclosed by Yilmaz is that shot boundaries are defined by thresholding the rotation changes for the whole video stream, 3.2 Algorithm. Therefore it is clear to the Examiner that Yilmaz teaches to determine a commercial based on the shot boundary thresholds. Since Chakraborty teaches determining a scene change (shot boundary) by comparing each of the computed metrics for the successive frames to threshold levels, and Yilmaz teaches to define a shot if it is anchor news or advertisement by the calculated v3 and a threshold, Chakraborty now (modified by Yilmaz) teaches where a commercial is determined by a shot boundary threshold, which reads upon the claimed limitation).

As to Applicants argument that Yilmaz does not use a number of shot boundaries in a predetermined interval to classify a commercial scene. Yilmaz uses a mean of eigenvectors in a shot.

3. The Examiner respectfully disagrees. Yilmaz teaches to cluster news video into news and advertisements based, based on the shots boundaries detected by principle coordinate approach, we used the minimum eigenvalued eigenvector, v3. To define a shot if it is anchor news or advertisement, we calculated the mean v3's in a shot and if its below a threshold, it is labeled as anchor news; otherwise it is labeled as advertisement, 4.4 Clustering Video Stream into News and Commercials. Further disclosed by Yilmaz is that shot boundaries are defined by thresholding the rotation changes for the whole video stream, 3.2 Algorithm. Therefore it is clear to the Examiner that Yilmaz teaches to determine a commercial based on the shot boundary thresholds. Since Chakraborty teaches determining a scene change (shot boundary) by comparing each of the computed metrics for the successive frames to threshold levels, and Yilmaz teaches to define a shot if it is anchor news or advertisement by the calculated v3 and a threshold, Chakraborty now (modified by Yilmaz) teaches where a commercial is determined by a shot boundary threshold, which reads upon the claimed limitation). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As to Applicants argument that Gonsalves does not disclose or suggest anything about an "inserting means [that] makes a type of the video transition effect to be inserted different according to whether the highlight scenes to be combined are the dynamic scene or the static scene".

4. The Examiner respectfully disagrees. Gonsalves teaches allowing the video editor to insert a video transition effect on a field/frame-by-field/frame basis in order to improve accuracy of the effect (Gonsalves, special effect, col. 3 line 11-14 line 24, between two frames col. 4 line 65-67, col. 5 lines 50-52, and fig. 3b: 320a-320b). Therefore, Pans teaching of the action shots at block 10 there may be other shots or video content at block 12 prior to the slow motion replay segment in block 14. A special effect, or edit at block 16, is almost always present between the normal shots in block 12 and 16 and the slow motion replay segment in block 18. After the slow motion replay in block 18, another edit effect in block 20, is usually present before resuming normal playa transition between two shots is made in a gradual manner using special editing machines to achieve a visually pleasing effect, and Gonsalves teaching of the video editor to insert a video transition effect on a field/frame-by-field/frame basis, teaches the insert a transition to a replay of an action shot based on a frame by frame basis, which reads upon the claimed limitation), thus it is clear to the Examiner that Nakamura (modified by Pan and Gonsalves) teaches to insert a transition based on a frame-by-frame basis for a highlight scene, which reads upon the claimed limitation. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As to Applicants argument that Pan does not disclose an inserting means that includes “a dynamic/static scene detector to detect whether a highlight scene is a dynamic scene with much motion or a static scene with little motion”. Accordingly, the combination of the teachings of Nakamura, Pan and Gonsalves does not result in the claimed limitation.

The Examiner respectfully disagrees. Nakamura teaches a scene classification apparatus of video for segmenting video into shots and classifying each scene composed of one or more continuous shots based on a content of the scene comprising: a detector for detecting a highlight scene (In such a case that a plurality of highlight scenes are detected by the analyzing unit 22, [0208] and fig. 2); extracting and

combining means for extracting and combining a plurality of highlight scenes (In such a case that a plurality of highlight scenes are detected by the analyzing unit 22 from a program during a CM broadcasting time range, and the present CM broadcast is commenced, the reproducing management unit 27 reproduces a plurality of detected highlight scenes in a time sequential manner by equally increasing a reproducing speed, [0208] and fig. 2. Nakamura discloses the reproducing management unit 27 reproduces a plurality of detected highlight scenes and the highlight scenes are stored in a highlight scene index storage unit, (fig. 2, element 25), it is clear to the examiner that in order to reproduce the highlight scenes stored in the storage unit, by the reproducing management unit, the highlight scenes are retrieved and combined, thus reading upon the claimed limitation). Nakamura is silent in regards to inserting means for inserting a video transition effect into a combined portion of the respective highlight scenes, the inserting means including a dynamic/static scene detector to detect whether a highlight scene is a dynamic scene with much motion or a static scene with little motion wherein the inserting means makes a type of the video transition effect to be inserted different according to whether the highlight scenes to be combined are they dynamic scene or the static scene.

However, Pan teaches inserting means for inserting a video transition effect into a combined portion of the respective highlight scenes, the inserting means including a dynamic/static scene detector to detect whether a highlight scene is a dynamic scene with much motion or a static scene with little motion (Pan teaches where the pattern of a slow motion replay in sports program including very fast movement of objects (persons, ball, and etc.), generally referred to as action shots at block 10. Following the action shots at block 10 there may be other shots or video content at block 12 prior to the slow motion replay segment in block 14. A special effect, or edit at block 16, is almost always present between the normal shots in block 12 and 16 and the slow motion replay segment in block 18. After the slow motion replay in block 18, another edit effect in block 20, is usually present before resuming normal play. A more detailed structure of the slow motion replay 14 of FIG. 1 is shown in FIG. 2. Typically the procedure of the slow motion replay includes six components, namely, edit effects in 20, still fields 22, slow motion replay 24, normal replay 26, still fields 28, and edit effect out 30, [0028-0029]. The edit effects in 20 and edit effects out 30, mark the starting and end points of the procedure of the slow motion replay 14, and typically are gradual transitions, such as fade in/out, cross/additive-dissolve, and wipes. Frequently, the logo of the television station will be shown during the edit effects in 20 and edit effects out 30. Other techniques may likewise be used, col. Therefore, it is clear to the Examiner that Pan discloses an inserting means to insert a transition effect into the action shots, and determines if the action shot is a slow replay shot or normal speed replay, which reads upon the claimed limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Pan with Nakamura for providing a generic system for video analysis which reliably detects semantically significant events in a video, [0006].

Nakamura (modified by Pan) is silent in regards to wherein the inserting means makes a type of video transition effect to be inserted different according to whether the highlight scenes to be combined are the dynamic scene or the static scene.

However, Gonsalves teaches allowing the video editor to insert a video transition effect on a field/frame-by-field/frame basis in order to improve accuracy of the effect (Gonsalves, special effect, col. 3 line 11-14 line 24, between two frames col. 4 line 65-67, col. 5 lines 50-52, and fig. 3b: 320a-320b).

Therefore, Pans teaching of the action shots at block 10 there may be other shots or video content at block 12 prior to the slow motion replay segment in block 14. A special effect, or edit at block 16, is almost always present between the normal shots in block 12 and 16 and the slow motion replay segment in block 18. After the slow motion replay in block 18, another edit effect in block 20, is usually present before resuming normal playa transition between two shots is made in a gradual manner using special editing machines to achieve a visually pleasing effect, and Gonsalves teaching of the video editor to insert a video transition effect on a field/frame-by-field/frame basis, teaches the insert a transition to a replay of an action shot based on a frame by frame basis, which reads upon the claimed limitation), thus it is clear to the Examiner that Nakamura (modified by Pan and Gonsalves) teaches to insert a transition based on a frame-by-frame basis for a highlight scene, which reads upon the claimed limitation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Gonsalves with Nakamura (modified by Chakraborty) to improve accuracy of the effect.